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## Chemical Analysis of Caddo Pottery: A Request for Assistance in the Study of Prehistoric Caddo Trade and Exchange with Their Neighbors, Both Near and Far

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## Chemical Analysis of Caddo Pottery: A Request for Assistance in the Study of Prehistoric Caddo Trade and Exchange with Their Neighbors, Both Near and Far

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# CHEMICAL ANALYSIS OF CADDO POTTERY: A REQUEST FOR ASSISTANCE IN THE STUDY OF PREHISTORIC CADDO TRADE AND EXCHANGE WITH THEIR NEIGHBORS, BOTH NEAR AND FAR

*Timothy K. Perttula*

The prehistoric Caddoan archeological record contains a diverse set of evidence on the nature of trade and exchange conducted by the Caddo with their neighbors, both near and far. I am interested in studying the scope, timing, and direction of trade/exchange between Caddo groups and surrounding non-Caddo communities, and in exploring changes in the nature of social and economic relationships between particular Caddo groups and with other prehistoric peoples.

As one well-recognized way to examine evidence for trade/exchange preserved in the archeological record, I have lately been studying the distribution of Caddo ceramics on Caddo and non-Caddo sites. In particular, and with the assistance of Hector Neff, James Cogswell, and Michael Glascock of the Missouri University Research Reactor (MURR) at the University of Missouri, instrumental neutron activation analysis (INAA) of sherds has been conducted to establish geographically restricted sources or source zones where particular prehistoric Caddo

pottery can reliably be shown to have been manufactured (Neff 2000).

To date as part of this effort, more than 550 sherds from more than 100 Caddo sites have been subjected to INAA. This includes 481 sherds from 103 sites in East Texas and Central Texas (the latter are from Caddo vessels traded to Central Texas hunter-gatherers), and the remainder are from southwestern Arkansas (12 sherds from two sites), northwestern Louisiana (19 sherds from eight sites), and southeastern Oklahoma (38 sherds from four sites). Most of the samples are from Caddo sites that date between ca. A.D. 1200 - 1680, but earlier and later Caddo sites are also represented. Additionally, INAA analysis of selected sherds from an Early Mississippi period site in southern Illinois and from protohistoric Wichita sites in southern Kansas have been shown to have been manufactured from East Texas clay sources.

The results have been encouraging, particularly with the chemical composi-

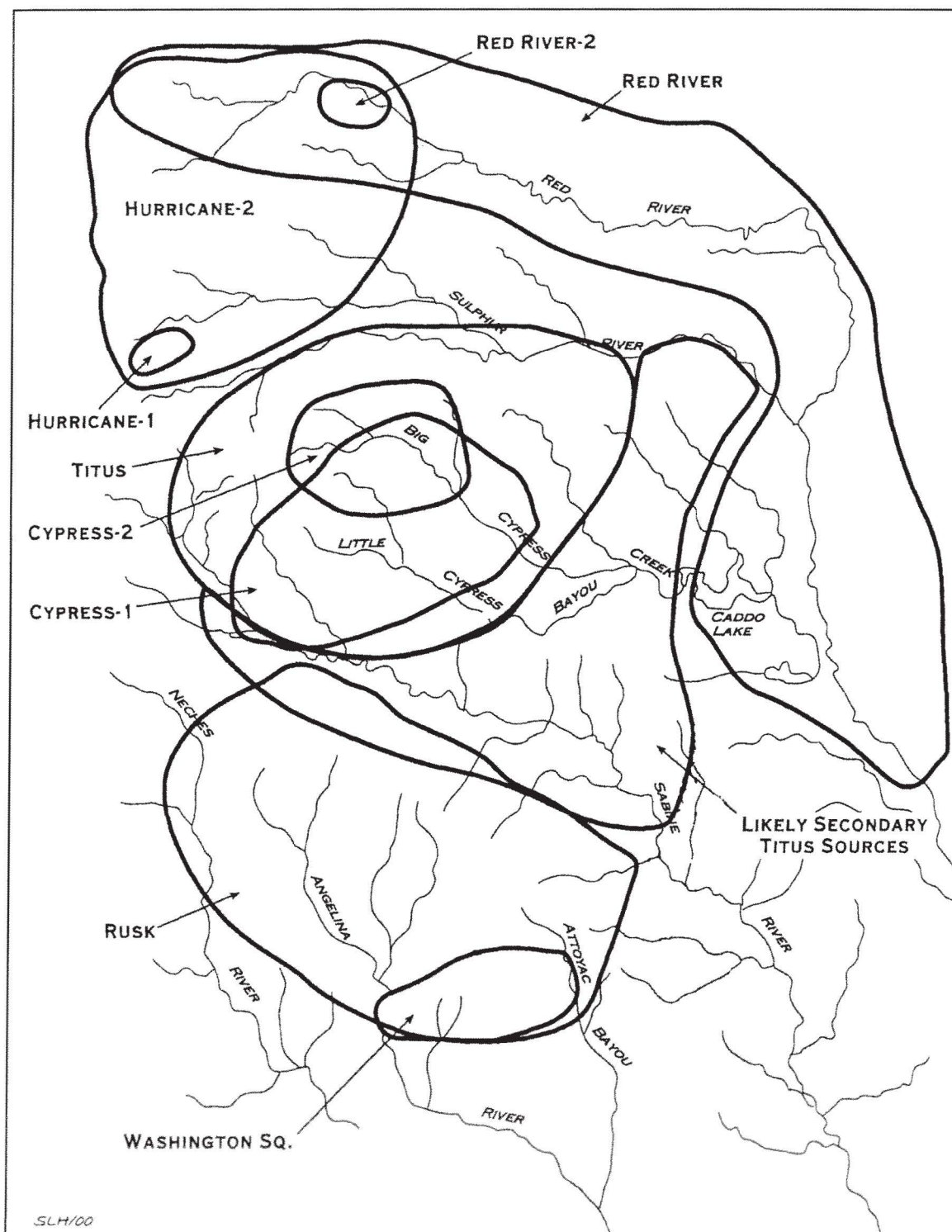


Figure 1. Chemical Compositional Groups Defined for Caddo Ceramics in East Texas.



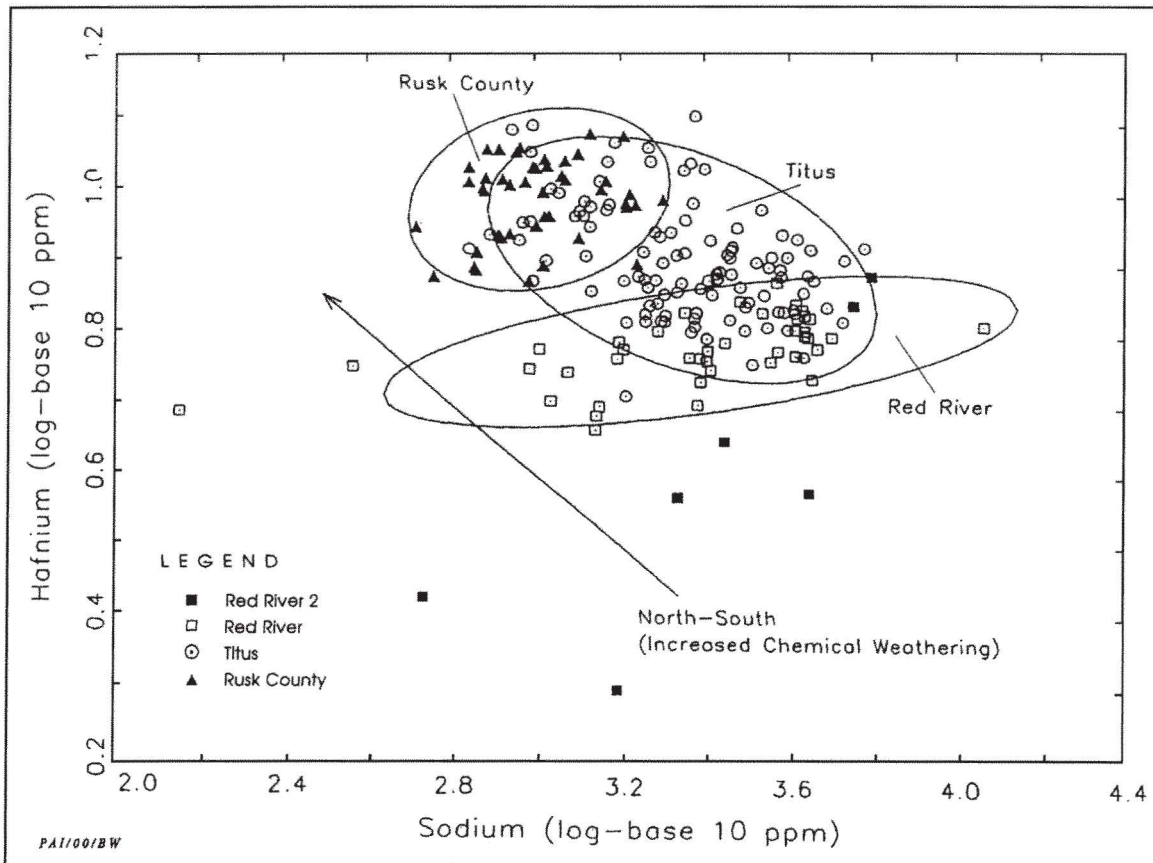


Figure 2. Plot of logged elemental concentrations of hafnium and sodium in the Titus, Red River, and Rusk compositional groups. Ellipses represent 90 percent confidence level for membership in the groups. From Perttula et al. (2000:Figure 8.24).

tional data from Caddo ceramics in East Texas. Nine different compositional groups have been defined from sites along the Red River to the north to the Angelina River and Attoyac Bayou drainages in the south (Figure 1). The Titus, Red River, and Rusk chemical groups comprise more than 82 percent of the current INAA data base, and these ceramic compositional groups can be readily differentiated because of geographical trends in chemical weathering of clays from north to south across East Texas (Figure 2). Further INAA analyses of Caddo sherds from East

Texas and southeastern Oklahoma are currently underway to better define the chemical character of prehistoric Caddo ceramic wares, and to ascertain more specific manufacturing or source locales.

Next, I would like to broaden the geographic scope of this study to include more sherds from prehistoric Caddo sites in areas outside of East Texas, particularly from the Red, Little, and Arkansas river basins in eastern Oklahoma, the Red and Ouachita river basins in southwestern Arkansas, and throughout northwestern

Louisiana. I need the assistance of archeologists – both professional and avocational – working in these areas to identify sites and collections worthy of INAA. Luckily, almost any collection of Caddo sherds will suffice.

If a Caddo archeological site contains decorated ceramics, and a reasonable temporal estimate of the age and affiliation of the ceramics can be made, then that site's sherd collection is a candidate for INAA study in this project. The best analytical results seem to be obtained if 5 - 10 decorated sherds (from known types or with identifiable decorative elements, such as an engraved pendant triangle, vertical brushing on the vessel body, tool punctated rim sherd, etc.) can be submitted for INAA from individual sites, and if a series of samples from related sites (i.e., belong to the McCurtain phase or the Belcher phase, etc.) can also be submitted. Each sherd itself need be no bigger than 1.5 x 1.5 cm on a side.

One thing to keep in mind is that any sherds submitted for INAA will be destroyed during the course of MURR sample preparation, and irradiation and gamma-ray spectroscopy. However, since the required size of the sherd sample is rather small, this should not pose much of an obstacle to analysis because it is possible to break off a small sherd from a larger one that can be retained in the collections. Small plugs can also be drilled from the base of whole vessels in any collections.

If readers of *Caddoan Archeology* would be willing to provide assistance with my request, and have sherd samples suitable for INAA, please contact me by e-mail or at the following address:

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